The Maryland Fruit Grower

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A SURVEY OF NEWER APPLE AND PEACH VARIETIES IN MARYLAND[1]

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In an effort to determine the extent and distribution of the planting of newer apple and peach varieties in Maryland, questionnaires were sent in 1938 to commercial fruit growers in nineteen counties. Of the 212 commercial growers surveyed, over half of this number or 53 per cent furnished information. Fifty-eight per cent of the apple growers reported that they were growing some of the newer apple varieties and 63 per cent of the peach growers reported some of the newer peach varieties. Eighteen per cent of these growers reported that they were growing some of both the newer apple and peach varieties, while 39 per cent of the growers replying reported no planting of any of the newer apple or peach varieties.

Apples

Information was sought regarding the extent of planting of 21 new apple varieties in Maryland. The replies show that 14 of these 21 varieties are now being grown throughout the State (Table 1). Edgewood, Joan, Kendall, Lobo, Melba, Milton, and Petrel are the seven varieties which, on the basis of this survey, are *not* being grown in Maryland.

TABLE 1. A Survey of New Apple Varieties Now Being Grown in Maryland

Variety	No. of Growers Reporting	Total Trees Reported	Average Age Years	Age of Oldest Trees (Years)
Blackjon	3	39	3.2	4
Blackmack	1	6	1.0	1
Blaxtayman	18	4,315	3.0	9
Cortland	4	170	12.1	13
Double Red Delicious	7	880	3.8	8
Jonared	1	200	1.0	1
Lodi	1	25	4.0	4
Macoun	1	80	6.0	6
Richared	10	471	2.6	9
Seeando Red Rome	3	185	1.0	2
Seeando Winesap	2	100	2.0	2
Starking	19	3,023	7.4	15
Staymared	7	841	1.8	10
Turley	3	13	2.0	2
Total	80	10,348	----	----

[1] Miscellaneous Contribution No. 673, Department of Horticulture, Maryland Agricultural Experiment Station.

[2] The author wishes to acknowledge the assistance of Mr. Glenn W. Lewis and Dr. A. L. Schrader in collection of data on this survey and the kind assistance of the many growers who furnished the information.

Blaxtayman. This variety was reported by 23 per cent of the apple growers averaging almost 254 trees per orchard having an average age of 3 years. The heaviest planting of this variety appears to be taking place in Frederick County where 57 per cent of the growers reported this variety with an average planting of 407 trees per orchard. In Washington County 16 per cent of the growers reported this variety with an average of 352 trees per grower. Seventy-two per cent of the growers in Washington, Harford, and Frederick counties accounted for over 90 per cent of all the Blaxtayman trees reported. While this variety averaged only 3 years of age 12.5 per cent of the trees were over 5 years and the oldest trees reported were 9 years of age (Table 1).

Starking. The Starking variety, a red strain of Delicious, was reported by practically the same percentage of the growers as was Blaxtayman (Table 1). The plantings of this variety, however, have been more or less concentrated in Washington County. Twenty-eight per cent of the apple growers in that county reported this variety and the plantings averaged 208 trees per grower which accounts for almost half of the trees of this variety reported. Starking, while averaging a little over 7 years of age, 61 per cent of the trees reported were over 5 years of age (Table 1). Growers in Harford County also seem to have been attracted by this variety. Twenty-one per cent of the growers in that county reported about 100 trees each.

Double Red Delicious. This variety ranks next in the total number of trees reported. Twenty per cent of the growers reporting apples indicated an average of 126 trees of this variety per grower. Plantings of this variety have not been as extensive as with the other red strains (Table 1). About 60 per cent of the trees of this variety were under 5 years of age.

Staymared. This variety was also reported by 20 per cent of the apple growers but the extent of the planting averaged slightly less than with Double Red Delicious. Staymared is just beginning to receive consideration, for over 90 per cent of the trees reported were under 3 years of age.

Richared. While this variety has not been heavily planted it has been given a wider distribution throughout the State than has either Double Red Delicious or Staymared. Almost 29 per cent of the growers reported this variety but have limited their planting to about 47 trees per grower. Eighty-two per cent of the trees reported were under 3 years of age.

Red Strains of Delicious. Combining the red strains of Delicious (Starking, Double Red Delicious, and Richared) reveals some interesting data. Eighty-six per cent of all the growers reported one of these Delicious strains, and seventeen per cent of the growers reported planting two of these three varieties in the same orchard but there were none who reported all three. On this basis 42 per cent of all trees of all the newer varieties planted were of the Delicious type or an average of 122 trees per grower.

Red Strains of Stayman. Grouping of red strains of Stayman (Blaxtayman and Staymared) the results show that 63 per cent of all growers reported planting these varieties while only 9 per cent reported planting both these varieties in the same orchard. These plantings averaged 206 trees per grower or much heavier than the Delicious type. Almost half of the trees of all varieties reported in this survey were of the Stayman type. (Table 1.)

Other Varieties. Tables 1 and 2 list the varieties and the number of times each was reported. It can be seen that varieties as *Blackmack, Jonared, Lodi, Macoun* are not being tried to any extent, each being reported but once.

Cortland, Blackjon, Seeando Red Rome, Seeando Winesap, and *Turley* are also being tried cautiously.

Summary for Apple Varieties. The results of this survey do not seem to indicate any different trends in variety plantings except to secure red strains of the older varieties. Growers who have found Stayman suitable to their conditions seem to be trying the red strains of this variety in preference to other newer varieties. On the other hand growers who have been successful with Delicious, have been turning to the red strains of this variety for their future production. It is very interesting to note that 97 per cent of the growers reporting newer apple varieties reported either the red strains of Delicious or the red strains of Stayman. Trees of Starking, Cortland, and Staymared were the oldest plantings reported while Jonared and Blackjon were the youngest.

While the prospect of extensive plantings of varieties such as Blackmack, Jonared, and Macoun seems unlikely, it is possible that Lodi may become more popular in sections of Maryland interested in early apples. Also, Turley may be a possible substitute for Stayman in some sections where cracking of Stayman causes heavy loss.

Peaches

Information was sought concerning 22 newer peach varieties. Of these 22 varieties, 18 were reported to be growing in Maryland (Table 2). Fay, Leeton, Marigold, and Viceroy are the four varieties which are not reported by growers.

TABLE 2. A Survey of New Peach Varieties Now Being Grown in Maryland

Variety	No. of Growers Reporting	Total Trees Reported	Ave. Age of Trees (Years)	Age of Oldest Tree (Years)
Candoka	4	47	1.2	3
Cumberland	3	155	1.3	2
Eclipse	7	956	2.5	8
Fertile Hale	1	50	1.0	1
Golden East	2	25	3.0	3
Golden Globe	2	425	3.0	3
Golden Jubilee	27	9,157	3.1	13
Halberta	6	578	4.7	7
Halehaven	10	4,260	1.4	4
July Elberta	5	600	4.7	10
Lizzie	3	149	1.0	1
Rio Oso Gem	7	211	1.4	2
Roberta	7	885	6.6	14
Salberta	5	410	3.5	6
South Haven	7	945	3.3	6
Valiant	5	362	2.0	2
Vedette	6	862	1.2	2
Veteran	1	6	2.0	2
Total	108	20,083	---	---

Golden Jubilee. This variety is by far the most popular of the newer peaches now being grown in Maryland. Eighty-two per cent of the peach growers having some newer varieties reported this variety with an average of

339 trees per grower. The total number of trees of this variety accounted for 45.5 per cent of all trees of all newer varieties reported. Golden Jubilee is very popular in Washington County where 24 per cent of the growers reported 493 trees per orchard. Trees of this variety while averaging but 3 years of age, showing the relative recent interest in it, 22 per cent of the trees were over 5 years of age.

Halehaven. This is another variety that is receiving considerable attention. Thirty per cent of the growers reported this variety which averaged 426 trees per grower (Table 2). With this variety also the main interest seems to be in Washington County where 14 per cent of the growers in this county reported it. For the state as a whole 50 per cent of all growers reporting this variety are in Washington County (Table 5). It is interesting to note that while the oldest trees encountered of this variety were only 4 years of age plantings of Halehaven has been rather heavy.

Other Varieties. About 7 per cent of the growers each reported *Eclipse, South Haven, Roberta,* and *Rio Oso Gem* and rank in number of trees reported in the order listed. None of these four varieties seem to be concentrated in any one county but are being tried throughout the State.

Vedette, Halberta, Veteran, July Elberta, and *Salberta* all were reported by about the same number of growers (Table 2). It is interesting, however, that most of the extensive plantings of these varieties has occurred in Western Maryland.

None of the other newer peach varieties were reported with any frequency and are not considered important at this time.

Summary for Peach Varieties. The results of this survey indicate that Golden Jubilee is the most important of the newer peach varieties with Halehaven next in line. Well over half of the trees of all varieties were of these two varieties. All trees of Golden Jubilee averaged about 3 years of age while Halehaven averaged 1 to 2 years. Eighty per cent of the growers with newer varieties reported either Golden Jubilee or Halehaven while 26 per cent of the growers with newer varieties reported either Golden Jubilee or Halehaven while 26 per cent of the growers reported both varieties.

Roberta and Golden Jubilee were the oldest of the newer varieties reported while Fertile Hale, Candoka, Cumberland, Lizzie, Rio Oso Gem and Vedette all were under 2 years of age (Table 2).

When these varieties that have just been planted come into bearing, it is possible that the distribution of some may become much greater.

THE APPLE SHOW

The Second Annual Apple Show held at Lord Baltimore Hotel, Baltimore, was much larger this year, and the quality of exhibits was high. Mr. A. J. Farley of New Jersey judged the Show. Eleven growers from 5 counties participated. There were 136 entries in the Show. Premium money was furnished by the State Fair Board. Classes represented were: Plates (5 apples); Diamonds (16 apples); Boxes; Bushels; and Fancy Baskets. The Show is sponsored by the Horticultural Society and has prospects of becoming a real Show if the growers will get back of it, not necessarily for the premiums, but for the advertising value that a Show of this type has for the fruit industry. It was surprising how many people did not know that Maryland raised such fine apples.

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WAYS AND MEANS OF REDUCING THE QUANTITY OF NON-PROFIT CULL APPLES

H. W. PRETTYMAN, Extension Horticulturist, Marketing, Inwood, W. Va.

Ever since we have been selling apples in a commercial way, we have had to contend with this matter of the non-profitable cull portion of the crop. A couple of years ago, in setting up an exhibit in connection with the Apple Harvest Festival in Martinsburg, Dr. Ray Marsh, Head of our Horticultural Department at West Virginia University, picturized the cull apple as a disreputable, and battered individual, and labeled it with the statement "Nobody Loves a Cull." This, I think sizes up the situation pretty well, but as I participate in the harvest and marketing of the great crop of apples which are produced in this area extending from Harrisburg on the North to Harrisonburg, Virginia, I see so many of these so-called, unloved culls, that I sometimes wonder if it is quite true that nobody loves them; certainly, no good apple producer has any use for them, but unfortunately not all of our apple growers are good producers, and we actually have quite a number of orchardists who grow nothing but culls. These men literally have been whipped by our present production and marketing set-up, and have concluded that they actually can make more real, net cash out of growing culls than they could if they undertook to grow good fruit.

Now there are a number of things that enter into any man's decision to give up this manner, and it might be well for use to consider some of these factors before we proceed to discuss some of the things which we think might be helpful in reducing the quantity of non-profitable culls. With some of these men, I think the main reason why they have ceased to try to grow good apples is the fact that their trees have become old and just naturally fail to produce good apples no matter what effort may be put forth to alter the situation. Most orchards of this class are on the thinner shale soils, and the vast majority of them were so seriously injured by the droughts of recent years that it is extremely unlikely that they will long continue to burden the industry with the poor fruit they produce.

On the other hand, we find some well located but poorly-managed orchards on some of our better soils, and where orchards of this kind are producing an undue proportion of culls it generally can be traced to the indifference of the owner or to the fact that he has outside interests or other phases of his farm management that interests or pays him more than pruning, spraying and all of the other orchard operations which are essential to good fruit production.

Here then, I think we have two of the main reasons for the production of so many culls in the Cumberland-Shenandoah Valley: namely, an ever increasing number of old weakened trees on poor sites and soils; and lack of pride or interest of the orchard owner. In each of these cases, the obvious remedy for the trouble is a well-sharpened ax applied to the tree trunk close to the soil line. Such producers as these may pick up a little extra cash from their apple crops, but they can't make any real money out of their orchards as regular investments and the sooner we succeed in getting such orchards cut out the better it will be for the industry.

On the other hand, many of our better-located and better-managed orchards are fast becoming too old to produce profitably, the high quality fruit demanded by present-day merchandising, and where this is true we are en-

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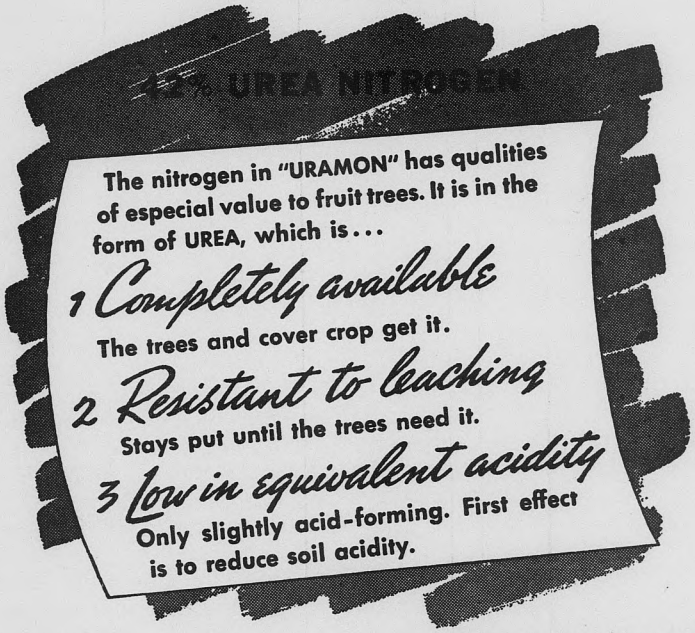
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couraging our growers to make new plantings. In some instances new sites may be selected for the new plantings; elsewhere it may be necessary to set the new trees as replants or inter-plants, but the main thing to do is to get some new plantings started and as your trees become old and fail to produce desirable fruit, take them out and put your efforts into the new plantings. And in speaking of new plantings, let's not lose sight of the fact that a poorly-colored apple may be just as much of a cull as a badly bruised one or one with a spot of scab on it. So in selecting new varieties keep this fact in mind and plant the better-colored sports of the standard varieties.

Then, provided we have good vigorous trees on good soils and under good management, what then about the culls? Regardless of the condition of the trees, or their location and the care we may give them, every orchard will produce a few apples which we may class as culls. In this category we find misshapen apples; limb rubs; hail marks, sun burns; russeted fruit, and quite a few other defects which we commonly think of as non-preventable, but by keeping our trees vigorous and properly pruned, it is surprising what a small proportion of our culls will be in this classification. However, when it comes to real culls we find such factors as Codlin Moth, San Jose Scale, Apple Scab, Blotch, and all the other insects and diseases topping the list, with bruising a close runner up, and all of these are, in part, preventable.

In West Virginia we began, back in 1922-23, to render first aid to our growers in the way of a more or less personalized spray service to help them to keep down the ravages of insects and diseases. For many years we looked upon this spray service as just about the ultimate that could be done to assist in the production of high quality fruit, and there is no question in anybody's mind but that it has paid big dividends to growers throughout the State and has been a real factor in maintaining the State's position in putting out high quality fruit. But of recent years we have been hearing more and more complaint from both shippers and receivers about the excessive damage that is found in fruit of all grades from this matter of bruising.

Many a fine crop of apples on the trees has been practically ruined by rough handling before it reaches the consumer. And regardless of the source of the damage, the fellow who grew it and prepared it for market gets the blame. It is true that some packers overlook the importance of careful handling and occasionally our Federal-State Inspectors have been obliged to "turn down" certain lots because of excessive bruises. On the other hand, many growers who personally have supervised their picking and packing operations have shipped fruit which they knew was almost, if not quite, perfect, only to have it rejected upon arrival. More often than otherwise the principal cause for complaint is the "terrible condition of the pack". And, even if the shipment has passed inspection at point-of-origin the buyer is dissatisfied and either rejects the shipment or demands an adjustment in price. These experiences usually result in direct financial loss to the shipper and quite often lead to misunderstanding between the grower and his sales agency and to loss of goodwill and valuable trade connections for everybody concerned.

Other states have had the same kind of difficulties and in 1927 Gaston in Michigan reported that the total amount of cull apples checked over a two-year period, 15 per cent were due to bruises. In Missouri, a study made of the "Causes of Cull Apples," listed mechanical injuries as second in 1928 and seventh in 1929. In New York State, Overholser conducted a rather detailed study of the cull situation in 1936, and in the same year Ellenwood of Ohio

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State made a similar survey.

The conclusions drawn from the survey in Ohio were as follows:

1. Minor bruising occurs on the tree before picking.
2. There was considerable variation between pickers as to the amount of bruising.
3. The picking operation did not result in as much bruising as some of the other operations.
4. Stayman proved more susceptible to bruising (during the picking operation) than other varieties.
5. There was no material difference in the amount of bruises on the apples from three different kinds of picking containers—the conventional padded picking bucket; the canvas bag; and one-half bushel baskets lined with heavy canvas.
6. Not much difference was noted between the crate and the basket as field containers.
7. Emptying the picking container into the field container was an important source of bruising.
8. There was practically no difference between the two methods used to transport the apples from the orchard to the packing shed (small truck and spring wagon).
9. The most important source of bruising was the grading operation.
10. More liberal use of sponge rubber on the grading machinery and more careful handling during the grading operations were recommended.

In order to check upon some of our operations, we began in the fall of 1937 to make a careful check of the amount of bruising that was done in each of the successive operations, such as (1) by the pickers, (2) in handling from the orchard to the packing house, (3) during the packing process, (4) in transit to market or storage, and finally (5) after it had gone through storage.

In setting up standards for taking data, it was agreed that on one or two slight bruises, not exceeding ¼ inch in diameter, would be counted as "None"; from three to five bruises under ½ inch in diameter was counted as slight, and all over ½ inch in diameter were considered as "serious". Likewise, more than five slight bruises and all stem punctures and skin breaks, including apples from which stem had been pulled, were classed as serious.

Table 1, shows a summary of a number of actual counts to determine the amount of bruising done by pickers to each of five varieties.

TABLE 1—Summary by Varieties of Bruising by Pickers

Degree of Bruises	York		Stayman		Grimes		G. Del.		Jonathan		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
None	584	71	513	50	1160	52	525	47	434	64	3216	54
Slight	138	17	280	27	346	15	146	13	66	10	976	17
Serious	97	12	241	23	744	33	459	40	181	26	1722	29
Total	819	100	1034	100	2250	100	1130	100	681	100	5914	100
Percent Total Bruise		29		50		48		53		36	ave	46
Placing	low			2nd		3rd		high		4th		

A study of these figures on damage done by pickers indicates that Golden Delicious showed the greatest amount of damage, with total bruising amounting to 53 per cent; Stayman was a close second with slightly over 50 per cent, and Grimes a close runner-up with 48 per cent, while Jonathan came into

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fourth place with 36 per cent and York lowest with only 29 per cent.

The figures on hauling reveal that Jonathan suffered most, with 17 per cent damage and York stood up best with only 10½ per cent. Taking the entire group of five varieties, York, Stayman, Grimes, Golden Delicious, and Jonathan, the average total bruises by pickers amounted to 46 per cent, and by the hauling operations 12.8 per cent and these two operations together brought the total damage up to 58.8 per cent of all the fruit damaged by bruising by the time it was delivered to the platform of the packing house. In order that foremen and managers might profit by these studies, care was taken in every instance to explain the nature of our investigations and secure the full co-operation of the field forces in getting representative samples and in having the fruit under study handled in the usual or customary manner. Then as counts were made the information was given at once to the person in charge of the picking or packing operation, and suggestions were made as to some of the probable reasons for some of the damage that was noted. For instance where the container used was the usual picking bag, some pickers would fail to keep it adjusted to the number of apples it contained, and this meant that quite often fruit would be dropped two or three times as far as was necessary if the flaps were kept buckled up to the proper hook, or if it were just a common bag, just a little care in keeping it adjusted at the proper angle across the shoulder may result in materially reducing the amount of injury. Then, too, many pickers were doing a lot of damage by improperly carrying the filled or partially filled bag up and down the ladder. A bag with two bushels (or even a half bushel), of apples in it, gets pretty heavy as it is carried up and down ladders all day long, and unless the picker is carefully instructed as to how to handle himself and his load, much fruit will be badly damaged in bumping it around on the ladders.

It is surprising how pickers respond to admonition about emptying their picking bags or buckets into field crates. If they aren't properly instructed, you can go through one of our big orchards most any time and locate the picking crew by listening to them emptying their fruit into the field boxes. I have done it many a time, and it is surprising how many of our, so-called, better managers think nothing of the damage that is done to the fruit when it is handled in this manner. When the matter is first called to the attention of the pickers they sometimes are inclined to pass it off as of no importance, but when they watch you checking after them and know that you are out to measure their efficiency, the picker will exercise more care than he will do if he thinks "nobody is looking".

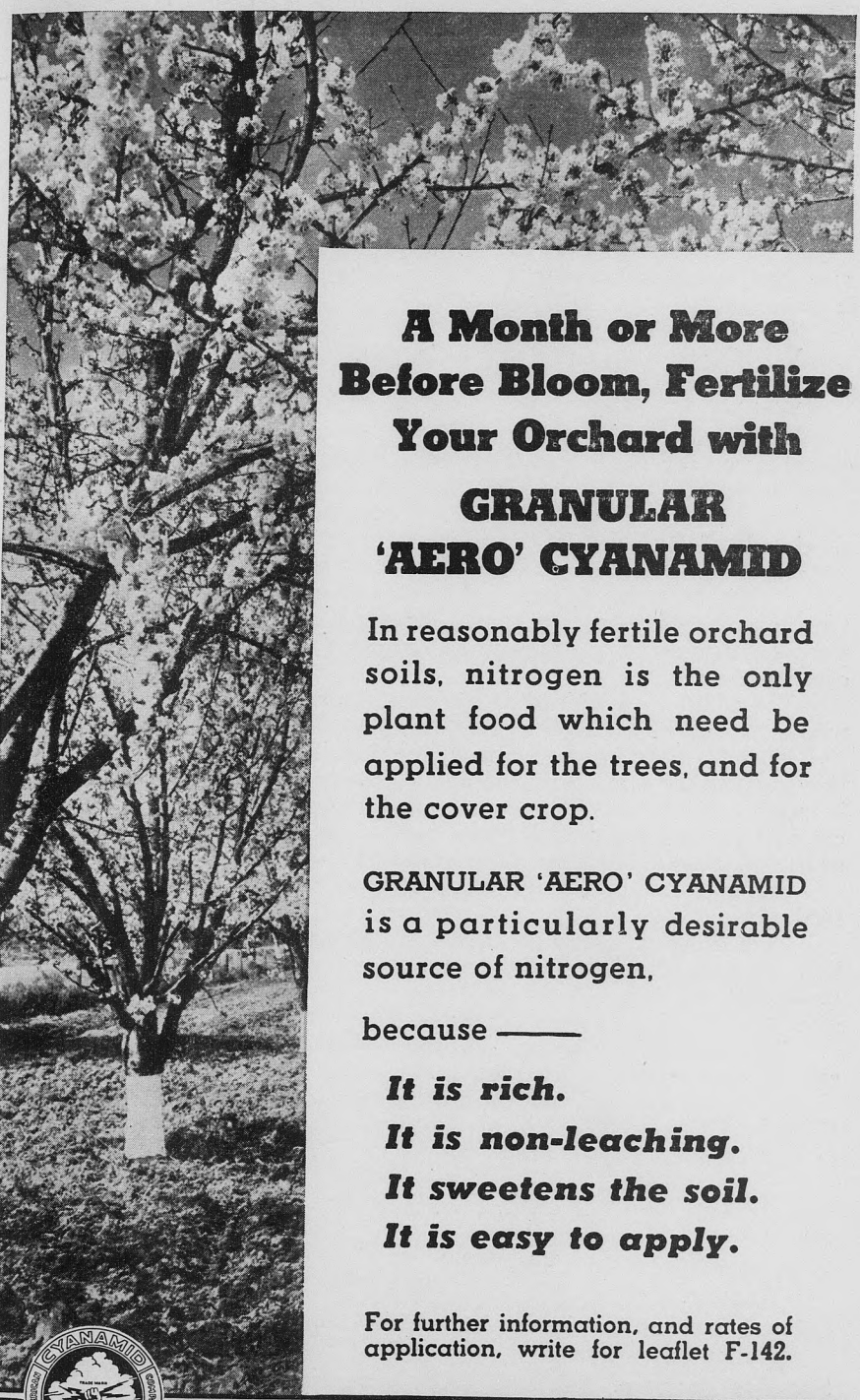
(To Be Continued)

HERE'S NEWS

The January 23, 1939 issue of "The Fruit Situation" issued by the U. S. Bureau of Agricultural Economics, states, "Cold storage holdings of apples on January 1 totaled 26.3 million bushels, about 18% less than a year earlier. The movement out of storage in December was indicated to be one of the largest on record."

MacTavish: "It's time to get dog licenses again. You keep a dog, don't you?"

McStingy: "No. If we hear a noise in the night we bark ourselves."



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FORMULA FOR TREE KILLER

Some growers are removing trees with a tractor, and others are cutting to the stump, allowing the stump to rot a year or more, before pulling it. The tree-killer formula has been printed in the Maryland Fruit Grower, but a recent leaflet written by C. F. Winslow, Extension Forester, University of Maryland, seems so concise that it is being printed here for the growers' information.

Arsenic, 1 pound.
Washing soda, 1 pound, or caustic soda, ½ pound.
Water, 4 gallons.
Whiting, ½ pound.

When large amounts of the solution are required washing soda will be cheaper, but for small quantities of solution caustic soda probably will be found handier.

To prepare the solution dissolve the soda in water using heat, then slowly add the arsenic, previously made into a thin paste. Place on a strong fire and after it has come to a boil allow it to remain boiling for at least a half hour. Stir from time to time and be careful to stand on the side away from the fumes, as they are poisonous. When the arsenic is thoroughly dissolved the solution may be made up to the required bulk by adding the remainder of the water.

The addition of whiting is merely to indicate the trees which have been treated as it turns white on slightly drying.

This work can be carried on at any time if the tree is barked. The trees should be frilled and the poison applied to the exposed wood. By "frilling" is meant a succession of downward axe cuts completely around the tree, each cut well overlapping the adjoining ones, so as to leave no uncovered section of bark through which the tree sap can flow.

Saplings can be cut off at the ground and the solution applied by a swabstick.

This material is very poisonous and extreme care should be exercised to keep the materials where children or pets can not get it. The material should be kept off the skin. Wear old clothes and gloves when applying it. If live-stock is apt to lick the cuts, cover the same with burlap.

The Lightning Chemical Co., New Orleans, La., puts out a tree killer called Lightning which is poisonous.

A non-poisonous solution called Atlas A can be purchased from the Chipman Chemical Co., Bound Brook, N. J. Use ratio of 8 qts. of water to 1 of chemical for both these products.

BULLETINS YOU MAY LIKE

Peach Production in Ohio. Bul. 581. 1937. Ohio Agr. Exp. Station, Wooster.

Cultural Systems for the Apple in Ohio. Bul. 580. 1937. Ohio Agr. Exp. Station, Wooster.

Spraying Program. Bul. 591. 1938. Ohio Agr. Exp. Station, Wooster.

Soils in Relation to Fruit Growing in New York. Bul. 672. 1937. Cornell University Agr. Exp. Station, Ithaca, New York.

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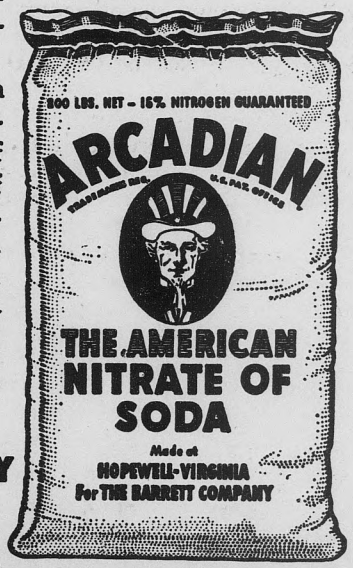
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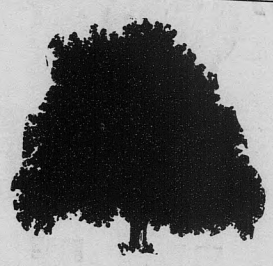

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